

APPLICATION FOR MILNE POINT UNIT, UGNU SAND

Area Injection Order No. 10-B

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Pilot Project for Water Flood and Polymer

Hilcorp Alaska, LLC

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Section A Application to Amend

20 AAC 25.402, 20 AAC 25.450(b), and 20 AAC 25.460

Hilcorp Alaska, LLC ("Hilcorp"), as Operator, hereby requests approval to initiate a polymer injection pilot project into the Milne Point Unit ("MPU") undefined Ugnu sand at S-pad.¹ Special approval for this proposal is required because: 1) polymer is not currently approved for enhanced oil recovery under Area Injection Order No. 10-B; and 2) prior temporary administrative approval for water / gas injection into the Ugnu sand per AIO 10B.01 has since expired.

Conservation and Area Injection Orders (AIO) have not yet been established for the Milne Point Unit Ugnu sand. Rather, the Ugnu sand is stratigraphically contained within the Schrader Bluff Pool, which is currently subject to AIO 10-B (as amended).

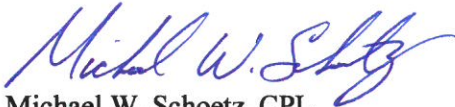
In accordance with 20 AAC 25.450(b), the Commission has discretionary authority to approve "...pilot projects for enhanced recovery using a technology not proved feasible under condition which it is being tested may be operated with less stringent requirements ... if the project will not result in an increased risk of fluid movement into freshwater sources." As the initial phase of this pilot also involves the drilling of two injection wells closer than 1,000ft to an existing Ugnu producer (MPU S-203), and the Ugnu remains an undefined pool, a spacing exception, if required, is also hereby requested per 20 AAC 25.055(a)(3).²

This project builds on work initiated by BP Exploration (Alaska) Inc. (BPX) in 2003 under authorizations established by AIO 10-B.01. The proposed affected area remains contained within the Aquifer Exemption Order No. 2 for the Milne Point Unit, Kuparuk River Field (July 8, 1987). No changes to the affected area initially defined by AIO 10B.01 are required, although the initial footprint of the pilot project is a subset of the overall S-pad development area. Likewise, the proposed Ugnu interval for this pilot project remains unchanged from AIO 10-B.1³ The production stream from the Ugnu will also be processed at the MPU Central Processing Facilities.

Hilcorp's pilot project has been designed to gather the data necessary to determine the appropriate spacing for paired Ugnu producer and injection wells at S-pad. If the pilot proves successful, potential exists to justify a project throughout the field, including the establishment of formal pool and area injection rules for the MPU Ugnu sand.

A detailed project description meeting the requirements of 20 AAC 25.402(c) is attached. If you have any technical questions, please call Almas Aitkulov (aaitkulov@hilcorp.com or 907-564-4252).

Sincerely,



Michael W. Schoetz, CPL
Senior Landman
Hilcorp Alaska, LLC

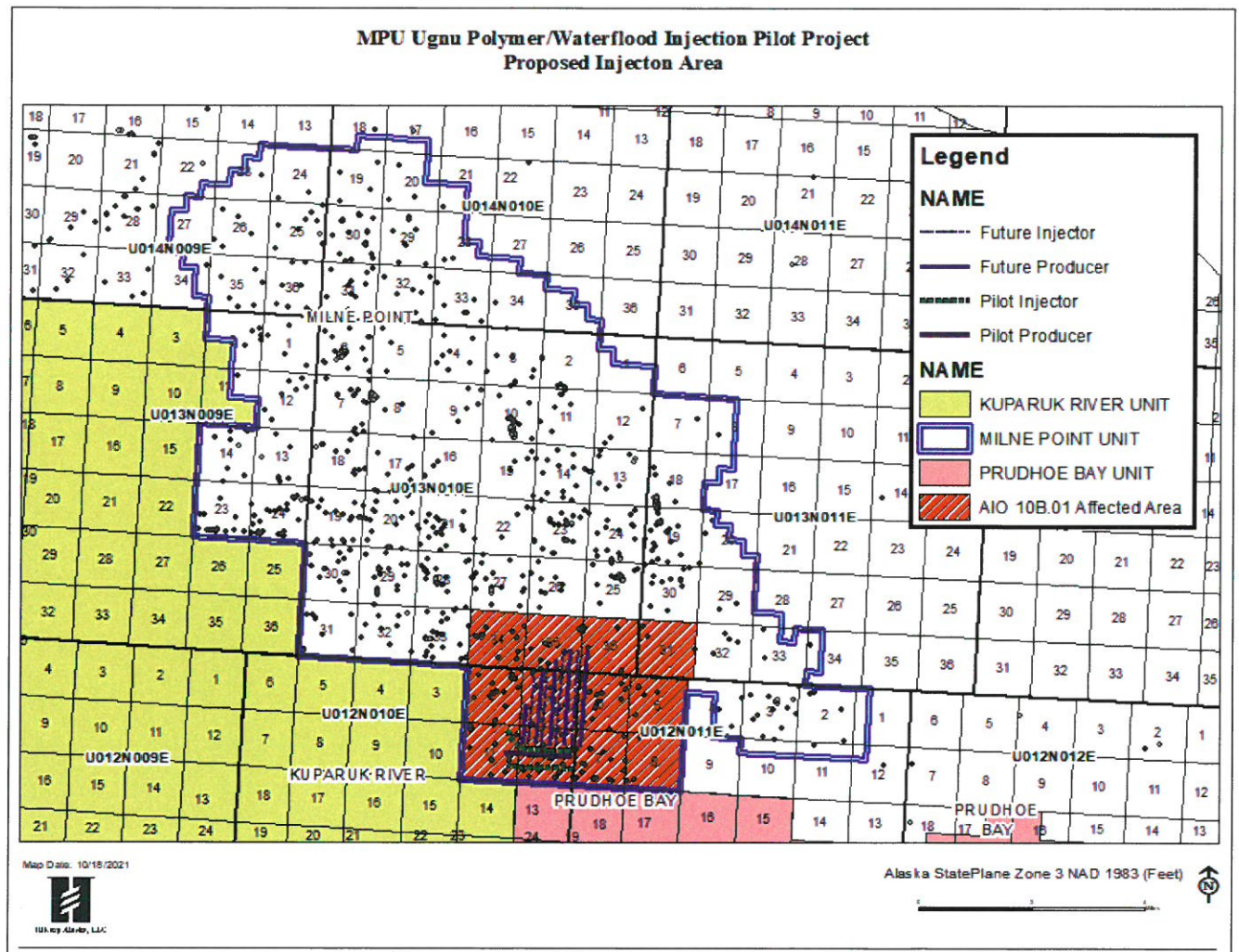
¹ In accordance with 20 AAC 25.450(b), the Commission has discretionary authority to approve "...pilot project for enhance recovery using a technology not proved feasible under conditions in which it is being tested and may be operated with less stringent requirement ... if the project will not result in increased risk of fluid movement into freshwater sources."

² 20 AAC 25.055(a)(3) provides: if oil has been discovered, the drilling unit for the pool is a governmental quarter section; not more than one well may be drilled to and completed in that pool on any governmental quarter section; a well may not be drilled or completed closer than 1,000 feet to any well drilling to or capable of producing from the same pool." Here, Hilcorp proposes to drill two injectors closer than 1,000 feet from the MPU S-203 Ugnu producer well.

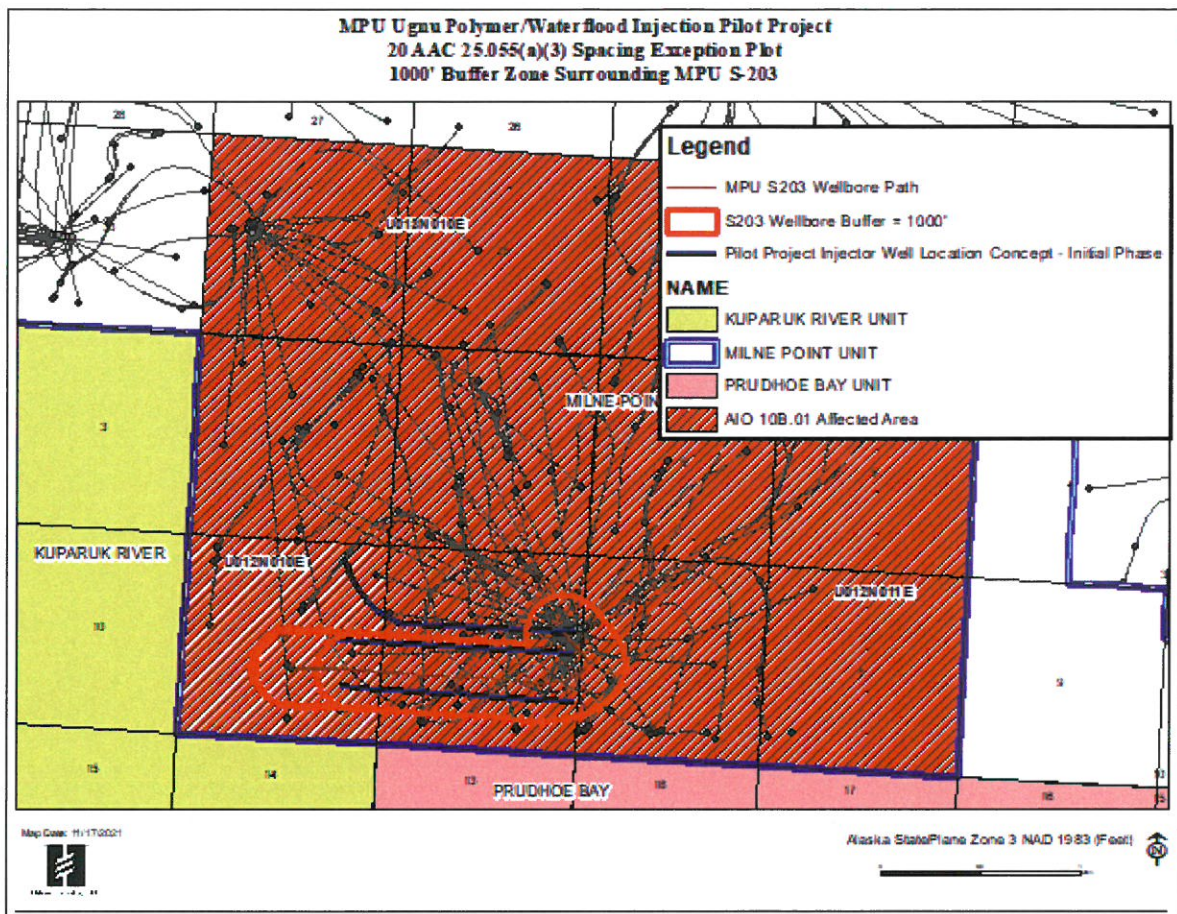
³ Correlative to the stratigraphic section from 3,890-4,150' MD in well MPG-01.

Section B Plat of MPU With Proposed Ugnu Injection Area; Spacing Exception Plat
 20 AAC 25.402(c)(1), 20 AAC 25.055(a)(3)

Below is a plat showing the proposed area for the Ugnu injection zone within the Milne Point Unit as of October 30, 2021.



Below is a plat illustrating the area within 1,000ft of the MPU S-203 wellbore. The location of the two proposed injectors are not yet known, but are planned to be approximately 700ft - 750ft offset (north and south) from current Ugnu producer MPU S-203 Well.



Section C List of Operators/Surface Owners

20 AAC 25.402(c)(2)

The following is a list of all operators and surface ownership within a one-quarter mile of the proposed injection area as described in this application.

OPERATORS:

Hilcorp North Slope, LLC
3800 Centerpoint Drive, Suite 1400
Anchorage, Alaska 99503

ConocoPhillips Alaska, LLC
700 G Street
Anchorage, Alaska 99501

ConocoPhillips Alaska, II LLC
700 G Street
Anchorage, Alaska 99501

ExxonMobil Alaska Production Inc.
P.O. Box 196601
Anchorage, Alaska 99519

Chevron U.S.A. Inc
1400 Smith Street
Houston, Texas 77002

Surface Owner:

Oil and Gas Division
State of Alaska, Department of Natural Resources
550 W.7th Ave., Suite 800
Anchorage, AK 99501

Section D Affidavits for Mailing Application

20 AAC 25.402(c)(3)

An affidavit showing the designated operators and surface owners within a one-quarter mile radius have been provided a copy of the application for injection is hereto attached as Exhibit D-1.

Section E Description of Operation
20 AAC 25.25.402(c)(4)

Hilcorp's proposed pilot project is focused on the drilling and testing of two horizontal injectors (one being a dual-lateral) to support an existing horizontal Ugnu producer (S-203). The S-203 Well was drilled and brought online in September 2019. Currently, S-203 is producing 13.5 API oil which is roughly equivalent to ~1000cp live oil. However, S-203 requires pressure support from injection wells. Hilcorp plans to test the economic viability of waterflooding and polymer flooding in the Ugnu sand. With similar API oil as in Schrader NB L-pad wells and current polymer flooding results, it is projected significant secondary recovery is possible within this interval. There is adequate produced and source water capacity available to provide the required injection volumes.

This application requests approval of an injection order for the injection of Class II fluids associated with Enhanced Oil Recovery (EOR) operation. The potential injection sources for the Ugnu sand will be the same as those described in AIO 10-B.1 for injection into the MPU Kuparuk River Oil Pool ("KROP") and the MPU Schrader Bluff Oil Pool and ("SBOP"). These are as follows:

- a. Source Water and Produced Water: The produced water is from Milne Point Kuparuk River Schrader Bluff Formations and source water (Prince Creek Formation). The approximate water injection volume needed for two Ugnu sand injectors, S-204 Well and S-22 Well, is ~2,000 barrels ("bbl") of water per day and may be increased as needed to make up reservoir voidage or as additional injectors are added.
- b. Other Fluids: The following other incidental fluids might be injected into the Ugnu sand at some time during the life of the project primarily to enhance recovery of oil and gas:
 - Partially hydrolyzed polyacrylamide (HPAM) polymer solutions. The same one Hilcorp is currently injecting in L-pad Schrader Bluff Formation Polymer Flooding.
 - Solution gas associated with oil production re-injected for the reservoir pressure maintenance.
 - Tracer survey fluid to monitor reservoir performance.

Section F Pool Information
20 AAC 25.25.402(c)(5)

The sole stratum for this project, the Ugnu sand, also remains identical to that approved by AIO 10B.

The interval planned for injection is equivalent to the stratigraphic interval defined in Exhibit G-1 (MPG-01) between the measured depths of 3,890ft and 4,550ft.

The proposed MPU Injection Area is identical to that area previously approved by AIO 10-B.01:

Umiat Meridain
T12N, R10E, Sections 1, 2, 11, 12;
T12N, R11E, Sections 5, 6, 7, 8;
T13N, R10E, Sections 34, 35, 36; and
T13N, R11E, Section 31

Note: Hilcorp's immediate activities under this pilot project (drilling injection support wells for S-203 Well) will be focused with T12N, R10E, Sections 11 and 12, and T12N, R11E, Section 7, U.T.

Section G Geologic Information

20 AAC 25.25.402(c)(6)

1. Injection Interval

a. Stratigraphy and Lithology

This pilot project will test injection into the MA, MB, MD and MF intervals, also known as the M-interval, of the Lower (undefined) Ugnu sand. The M-interval extends from 3,890ft MD to 4,150ft MD in the MPG-01 Well in Exhibit G-1. Detailed correlations of well-logs place a major unconformity at the base of the MF interval that defines the boundary between the Lower Ugnu sand and the underlying Schrader Bluff interval. Based on palynological work the M-sands are determined to be Maastrichtian in age.

The Ugnu sand in the Milne Point Unit is generally characterized by a thick marine shelf packages incised by stacked fluvial and deltaic valley-fill sandstones. The M-interval is described in core from the MPB-02 Well as being comprised of fine- to coarse-grained sandstones with layers of carbonaceous debris and occasional shale clasts. There is also a marked increase in the proportion of unidirectional current-formed structures (current ripples, planar stratification and cross-bedding). These sandstones incise into underlying marine shelf deposits. The coarse, locally conglomeratic, sediments are interpreted as a fluvial and deltaic valley-fills associated with a major Late Maastrichtian sea-level fall. The valleys grade northeastward into thick, upward-cleaning sand packages, which represent extensive lowstand delta complexes.

In the Pool area, the M-interval of the Lower Ugnu sand is divided into four zones named MF, MD, MB, and MA from the bottom to top as shown in Exhibit G-1. The M-interval averages 200ft - 250ft total vertical thickness (TVT) in gross thickness though the net pay is likely half that. Permeability in the M-interval pay ranges from 0.5 to 3 Darcy and porosity ranges from 21 to 36 percent.

Zones MA, MB, and MD are the primary, near-term production and injection intervals. These zones are characterized by numerous blocky, homogeneous stacked channel stories. The MF zone is a lower net to gross depositional system characterized by a cleaning upward series of thin interbedded sandstones and siltstones making it a secondary option of future M-interval development.

b. Structure

The Lower Ugnu structure in this area of the Milne Point Field is a part of a larger monocline feature that dips 1 to 2 degrees to the east-northeast into the basin, as shown in Exhibit G-2. This monocline structure is a regional feature that extends from the southwest of the Kuparuk River Field to the offshore area beyond the barrier islands.

Exhibit G-2 is a generalized structure map for the Milne Point Unit that is built on the MA top reservoir. Faulting occurred during the Early Tertiary structural inversion of the Kuparuk Field. During this time some NW-SE rift related faults were reactivated and additional N-S faulting occurred creating a complex structure through which oil began to migrate and later re-migrated as faulting continued to alter the

structure and traps. Regional eastward tilting occurred in response to sediment loading as a massive system of deltas advanced from the Brooks Range toward the northeast during the Tertiary. The faults that cut the Lower Ugnu sand are thought to have formed in response to this loading because of their dominant down-to-the basin (east and northeast) geometry.

The Lower Ugnu sand structural fabric is the primary control of oil accumulation and distribution in the Milne Point Field M-sand interval. At present, there are 15 discrete fault blocks, or hydraulic units, that appear to control the oil distribution in the core area of the field. Thick oil accumulations in M-sand intervals occur in the up-dip, southwest regions of these discrete fault blocks. The faults shown on Exhibit G-2 represent mappable fault systems that exhibit enough lateral and vertical continuity to displace and compartmentalize the M-Sand reservoirs into fault bounded structural blocks that contain different oil water contacts. Thus, when drilling new fault blocks within the M-interval, each fault block must be evaluated as a separate case using all available offset data.

2. Confining Intervals

The Lower Ugnu M-interval is bounded above by a Middle Ugnu sand L-interval flooding surface. This upper boundary is defined by a change in lithology and electric log character at the top of the MA Sands and is interpreted as shale. The top of the M-interval reservoir (MA), below the L-interval shale, is reservoir quality sandstone, which is characterized by low gamma-ray (<70 API) and higher resistivity (5-10 ohm-meter). The overlying shale, which caps the M-interval, is an impermeable 30ft TVD thick low resistivity (2-5 ohm-meters) and high gamma-ray (>90 API) layer. In well logs, it can be demonstrated that the basal L-interval shale is laterally continuous across the entire injection area.

The Lower Ugnu sand is bound at the base by the Maastrichtian age shale that caps the older Schrader Bluff interval. This shale is a flooding surface by definition that lies conformably atop the Schrader Bluff Na interval, and is recognized as being the base of the MF zone, the oldest Lower Ugnu sand unit at Milne Point. This lower boundary is defined by a change in lithology and electric log character at the top of the Schrader Bluff Na sands and is interpreted as shale. The top of the Na reservoir, below the MF shale, is reservoir quality sandstone, which is characterized by low gamma-ray (<70 API) and higher resistivity (5-10 ohm-meter). The overlying MF shale, which caps the Na reservoir, is an impermeable 10ft-20 ft. TVD thick low resistivity (2-5 ohm-meters) and high gamma-ray (>90 API) layer. In well logs, it can be demonstrated that the MF shale is laterally continuous across the entire injection area.

*See: Exhibit G-1, Well log for MPG-01; and Exhibit G-2, Ugnu sand Top Structure Map
(CONFIDENTIAL)*

Section H Well Logs

20 AAC 25.402 (c)(7)

All open-hole logs from current Milne Point Unit wells penetrating the Ugnu sand are on file with the Commission. *See* Exhibit G-1.

The G-01 Well is the type log for the Milne Point Ugnu Injection Area with stratigraphy and marker horizons annotated.

Exhibit H-1 (MPS-14) is representative of the Ugnu stratigraphy in the S-pad area.

Section I Casing Information

20 AAC 25.402 (c) (8)

Convert S-22 Well to an Injector

The MPU S-22 Well is an existing horizontal well that was drilled to test the Ugnu MB. During this pilot program, Hilcorp plans to convert S-22 to an injector. The well is a conventional development well design utilizing a 20" conductor, 10-3/4" surface casing and 7-5/8" intermediate casing, see Exhibit I-1. A 4" liner was drilled out of the 7-5/8" casing and was turned horizontal into the Ugnu MB for approximately 3,000ft. Screens were run in this liner to produce the Ugnu. The liner was hung up into the 7-5/8" casing with a Baker ZXP liner top packer. A 4-1/2" tubing string was run and stabbed (with seals) into the top of the liner top packer to produce the well. A sliding sleeve was placed in the tubing string to facilitate jet pumping the well.

Note: The 4" liner was cemented off in preparation to drill the S-203 Producer. As part of the Ugnu pilot project, the 4" liner will be either: 1) drilled out and the screens perforated for injection; or 2) new laterals drilled to gain optimum distance from the MPU S-203 producer.

New Additional MPU S-204 Injection Well

The MPU S-204 Well will be a new injector drilled to offset the MPU S-203 producer opposite the MPU S-22 Well. The casing plan will follow other recently drilled injectors at MPU with a 20" conductor, a 9-5/8" surface casing string down to depth and then a 4-1/2" liner drilled out of the 9-5/8" casing and turned horizontal through the Ugnu MB Sand, see Exhibit I-2. Sections of 4-1/2" screens or slotted liner will be mixed into the blank 4-1/2" pipe for water injection. The 4-1/2" liner will be hung off into the 9-1/2" casing with a ZXP liner top packer. A 3-1/2" tubing string will be ran and stabbed into the top of the liner top packer with seals for water injection.

Section J Injection Fluid

20 AAC 25.402 (c)(9)

Produced water from the Kuparuk River, Schrader Bluff, Sag River and Ugnu sands is separated from the oil and gas at the Milne Point Central Processing Plant and will be injected into the Ugnu sand. Produced water may also contain trace amounts of scale inhibitor, corrosion inhibitor, emulsion breakers and other products used in the production and separation process.

Analysis of Composition of Typical Fluid - Figure J-1 (below) is a listing of the water composition of the comingled production stream based on average samples collected [by Hilcorp] most recently.

Estimated Maximum Amount to be Injected daily: peak injection rate is anticipated to be about 1,000 barrels ("bbl") of water per day per injector.

Compatibility with formation and confining zone – no direct tests have been conducted to confirm that plugging or clay swelling will or will not be a problem. One of the objectives of injecting produced water into an Ugnu sand pattern is to evaluate water compatibility

Other Fluids may include:

- Partially hydrolyzed polyacrylamide (HPAM) polymer solutions. The same one currently being injected in L-pad Schrader Bluff Formation Polymer Flooding. Planned polymer concentration of 1,500 parts per million of 20million Daltons molecular weight HPAM polymer.
- Solution gas associated with oil production re-injected for the reservoir pressure maintenance.
- Tracer survey fluid-to monitor reservoir performance. Tracer fluids include conservative and/or partitioning tracers.

Figure J-1, Produced Water Analysis

Sample Number: S-190808-00257

Sample Name: Milne Point Misc. - CPF Inj. Water

Location:	Area: MILNE POINT	Unit: MILNEFAC	Sample Point: MP FAC
Sampled Date:	7/26/2019 12:00:00AM		
Matrix Id:	WATER - PRODUCED		
Reviewed By:	Date:		

Analysis Results:

Test	Parameter	Result	UOM
DIONEX IC * ACETATE	ACETATE	196.8	mg/l
DIONEX IC * BUTYRATE	BUTYRATE	<5.0	mg/l
DIONEX IC * CHLORIDE	CHLORIDE	5879.4	mg/l
DIONEX IC * FORMATE	FORMATE	<5.0	mg/l
DIONEX IC * PROPIONATE	PROPIONATE	<5.0	mg/l
DIONEX IC * SULFATE	SO4 (SULFATE)	21.0	mg/l
ICP METALS * AL (ALUMINIUM)	AL (ALUMINIUM)	<0.10	mg/l
ICP METALS * B (BORON)	B (BORON)	14.32	mg/l
ICP METALS * BA (BARIUM)	BA (BARIUM)	18.95	mg/l
ICP METALS * CA (CALCIUM)	CA (CALCIUM)	120.55	mg/l
ICP METALS * FE (IRON)	FE (IRON)	1.02	mg/l
ICP METALS * MG (MAGNESIUM)	MG (MAGNESIUM)	67.87	mg/l
ICP METALS * MN (MANGANESE)	MN (MANGANESE)	0.084	mg/l
ICP METALS * NA (SODIUM)	NA (SODIUM)	4206.49	mg/l
ICP METALS * P (PHOSPHORUS)	P (PHOSPHORUS)	0.42	mg/l
ICP METALS * SI (SILICON)	SI (SILICON)	14.73	mg/l
ICP METALS * SR (STRONTIUM)	SR (STRONTIUM)	5.53	mg/l
ICP METALS * ZN (ZINC)	ZN (ZINC)	0.01	mg/l
S-2320 ALKALINITY * TOTAL	BICARBONATE (HCO3)	1445.0	mg/l
	CARBONATE (CO3)	0.0	mg/l
S-2510 * CONDUCTIVITY	CONDUCTIVITY	10710	uS/cm

Section K Injection Pressures

20 AAC 25.402 (c)(10)

The estimated maximum and average injection pressures anticipated for the Ugnu sand wells remain consistent with those proposed by BPX in 2003:

Type Well	Est. Max. Injection Pressure	Est. Ave. Injection Pressure
Produced Water Injection	2500 psig	1500 psig

Section L Fracture Information

20 AAC 25.402 (c)(11)

The estimated maximum injection pressures for secondary and enhanced recovery wells will not propagate fractures through the overlying confining strata, which may enable the injection or formation fluid to enter freshwater strata.

The only freshwater stratum in the area of issue is the Prince Creek Formation, which is exempted under Aquifer Exemption Order No. 2 dated July 8, 1987. See Section N for additional detail.

Injection into the Ugnu sand above the parting pressure could be necessary to allow for pressure support and additional recovery of oil. Based upon Schrader Bluff injection performance, it is unlikely injection pressures would breach the integrity of the overlying confining zone. The Middle Ugnu, Upper Ugnu, and Sagavanirktok Formations overlie the Lower Ugnu of interest. This is approximately 1,300ft TVD from top of MA to base of the Prince Creek Formation. These overlying formations are an interbedded system of shale and sandstones (50% shale, 50% sandstone) that are expected to contain significantly high pressures.

Section M Formation Fluid

20 AAC 25.402(c)(12)

The following water analysis of Ugnu sand water (K-34 MB source water well on Dec. 10, 2014) is presented below in ppm:

	Acetate	Al	Ba	Bicarb Alk	B	Ca	Cl	Cr	Fe	Li	Mg	Mn	PH	P	K	Si	Na	SG	Sr	Sulfate	CO ₂	H2S
Ugnu - Milne	954	0.3	119	439	9	951	19458	0.0	14.7	3.8	815	0.1	7.1	0.0	184	8	14600	1.028	49.0	0.0	3.33	0.0

Section N Aquifer Exemption

20 AAC 25.402 (c) (13)

Aquifer Exemption Order No. 2 (AEO No. 2) was issued by the Commission on July 8, 1987 and covers Class II injection activities for the following lands:

T13N, R9E, UM - Sections 13, 14, 23 and 24
T13N, R10E, UM -All Sections
T13N, R11 E, UM - Sections 5 - 8, 15 - 22, 29 - 32

These lands are the same as those included by leases held by the Milne Point Unit and covered under existing Conservation Orders for the Schrader Bluff Oil Pool, Sag River Oil Pool and the Kuparuk River Oil Pool.

Section O Hydrocarbon Recovery

20 AAC 25.402 (c)(14)

The proposed Ugnu pilot project, as currently planned includes waterflooding and polymer flooding of a single producer / two injector pattern and potentially up to five additional patterns (5 producers and 5 injectors) at S-pad. A total recovery of approximately 9-25 percent OOIP is expected for this development scenario. This compares with 4-8 percent OOIP oil recovery attributable to primary depletion.

Section P Mechanical Well Condition

20 AAC 25.402(c)(15)

To the best of Hilcorp's knowledge, the wells within the Milne Point Unit were constructed, and where applicable, have been abandoned to prevent the movement of fluids into freshwater sources.

A total of 11 wells penetrate the injection interval of the proposed Ugnu MB Pilot Project. A review of those 11 wells has been conducted and all records indicate that casing mechanical integrity exists in all 11 wells. A review of the cementing volumes pumped on the casing strings that penetrated and are in contact to the Ugnu MB interval revealed that in all 11 wells, the contacted casing strings are cemented in place with a minimum of at least 400ft of cement covering the proposed injection interval. See table P-1 below.

Table P-1: Mechanical well condition for wells within a quarter mile radius of proposed project area

	Well	Casing String Across MB	Cement Volume	TOC (MD)	TOC (TVD)	Top of the MB (TVD)	TVD Cement over Top of MB (Ft.)	Comments
1/4 Mile Radius from PROP INJ S-204	S-17	7-5/8"	739 bbls	Surf.	Surf.	3904	3904	
	S-24	7-5/8"	58 bbls	2,704' (Calc.)	2575	3814	1239	
	S-23	7-5/8"	840 bbls	Surf.	Surf.	3856	3856	Just barely over 1/4 mile from prop inj
	S-33	7"	51 bbls	3,884' F/ SLB CMT dated 11-15-2002	3,184	3,771	587	
	S-33A	7"	56 bbls	4,100' F/ SLB USIT dated 1-31-2007	3,321	3,758	437	
	S-14	7"	76 bbls.	3,772' (Calc)	2,824	3,722	898	Abandoned MB Oil Producer
			1250 Sx Lead (10.7 ppg) and 350Sx tail 15.8 ppg)					
	S-31	7"		Surf.	Surf.	3676	3,676	
	S-26	7"	59 bbls 'G'	3,321' (Calc)	2755	3772	1,017	
	S-06	7"	54 Bbbls.	2,976' (Calc.)	2694	3838	1,144	
1/4 Mile from S-22	S-13	7"	973 bbls.	Surf.	Surf.	3858	3,858	
	S-203	9-5/8"	551 bbls.	Surf.	Surf.	3825	3,825	MB Producer
	S-26	7"	59 bbls 'G'	3,321' (Calc)	2755	3772	1,017	
	S-33	7"	51 bbls	3,884' F/ SLB CMT dated 11-15-2002	3,184	3,771	587	
	S-33A	7"	56 bbls	4,100' F/ SLB USIT dated 1-31-2007	3,321	3,758	437	
S-26, S-33, and S-33A 1/4 mile away from both proposed projects								

Section Q Mechanical Integrity

20 AAC 25.402(c)

In drilling all Milne Point injection wells, the casing is pressure tested in accordance with 20 AAC 25.030(g). When a producing well is converted to injection, the casing pressure test will be repeated in accordance with 20 AAC 25.412(c). Injection well tubing/casing annulus pressures will be monitored and recorded on a regular basis. Hilcorp, as operator of the Milne Point Unit, will be responsible for the mechanical integrity of injection wells and for ensuring compliance with monitoring and reporting requirements. Hilcorp will comply with all stipulations and requirements of recently issued Conservation Order 496.

Section R List of Exhibits

Exhibit D-1 – Affidavit of Mailing

Exhibit G-1 - Well log for MPG-01 Well

Exhibit G-2 - Ugnu sand Top Structure Map (Confidential)

Exhibit H-1 – Well log for MPS-14 Well

Exhibit I-1 – Well schematic for MPU S-22 Well

Exhibit I-2 – Well schematic for MPU S-44 Well

Exhibit D-1

AFFIDAVIT OF MAILING

STATE OF ALASKA §
 §
THIRD JUDICIAL DISTRICT §

I, Michael W. Schoetz, on oath, deposes and declares:

1. I am employed by Hilcorp Alaska, LLC.
2. On November 24, 2021, I caused copies of the Application for Milne Point Unit, Ugnu Sand Pilot Project for Water Flood and Polymer (excluding confidential exhibits), to be delivered by certified mail to the following:

ConocoPhillips Alaska, Inc
Kuparuk River Unit Operator
Attn: Jason Lyons
700 G Street
Anchorage, Alaska, 99501

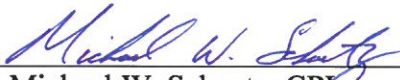
ConocoPhillips Alaska II, Inc.
Attn: Jason Lyons
700 G Street
Anchorage, Alaska 99501

ExxonMobil Alaska Production Inc
Attn: Melonnie Amundson
P.O. Box 196601
Anchorage, Alaska 99519

Chevron U.S.A. Inc
Attn: Gary Selisker
1400 Smith Street
Houston, Texas, 77002

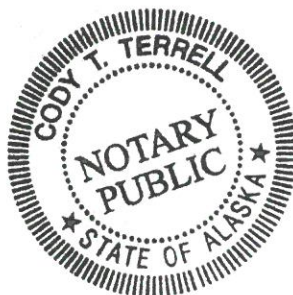
Hilcorp North Slope, LLC
Prudhoe Bay Unit Operator
Attn: Kyndall Carey
3800 Centerpoint Drive, Suite 1400
Anchorage, Alaska 99503

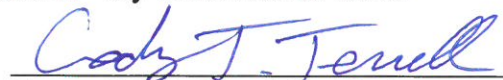
Tom Stokes, Director
Oil and Gas Division
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 1100
Anchorage, Alaska 99501



Michael W. Schoetz, CPL
Senior Landman

Subscribed and sworn to before me this 24th day of November 2021.





Cody T. Terrell
Notary Public in and for Alaska
My Commission Expires January 26, 2025

G-01



8/22/1989

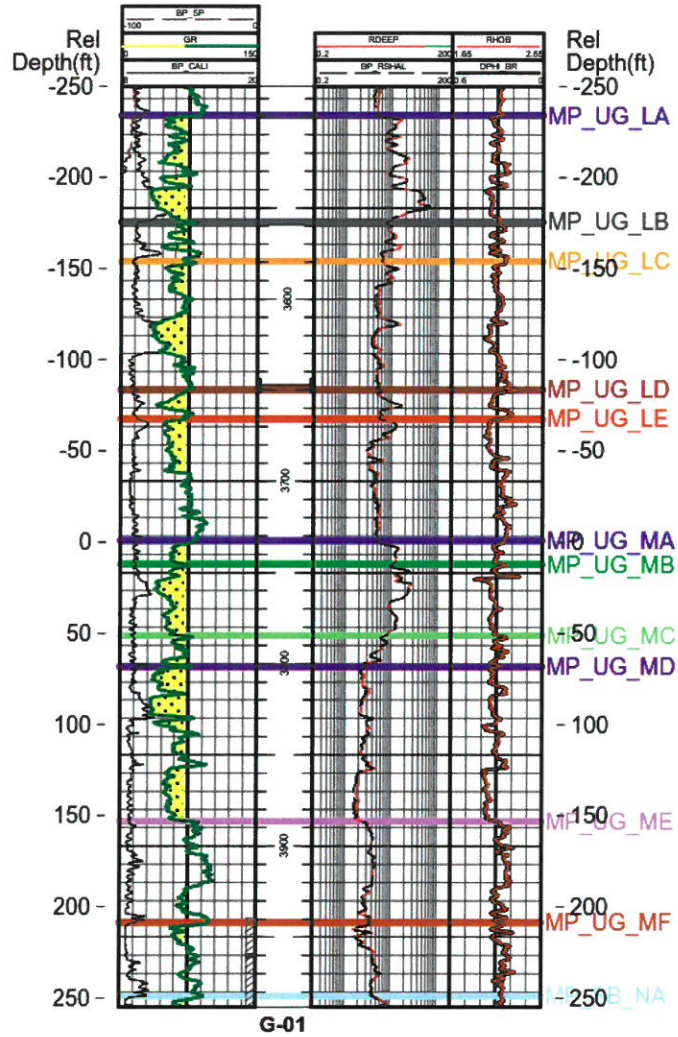


Exhibit G-1: Well log for MPG-01 in TVD

S-14



8/4/2003

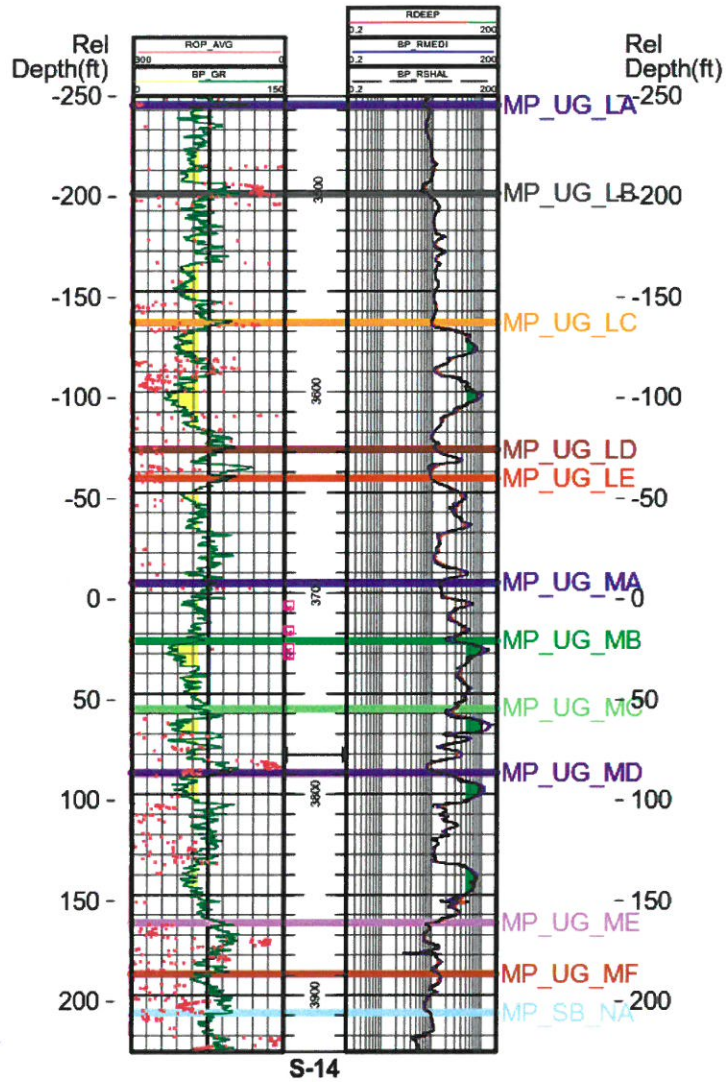
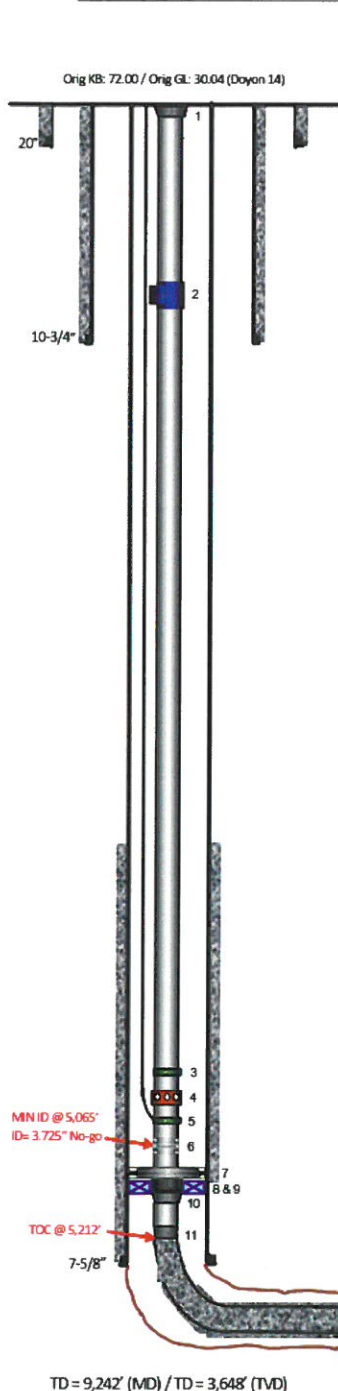


Exhibit H-1: MPS-14 well log representative of the Ugnu stratigraphy in the S-pad area

SCHEMATIC

Milne Point Unit
Well: MPU S-22
Last Completed: 10/6/2003
PTD: 203-147



TREE / WELLHEAD

Tree	4-1/16" 5M FMC
Wellhead	FMC 11"x 4.5" 5M Gen 6 w/ 4.5" TC-II T&B. Tubing Hanger, CIW 'H' BPV Profile

OPEN HOLE / CEMENT DETAIL

20"	260 sx of Arctic set in 24" Hole
10-3/4"	485 sx Class 'L', 312 sx Class "G" in 13-1/2" Hole
7-5/8"	292 sx Class "G" in 9-7/8" Hole

CASING DETAIL

Size	Type	Wt/ Grade/ Conn	ID	Top	Btm	BPF
20"	Conductor	92 / H-40 / N/A	19.124	Surface	110'	N/A
10-3/4"	Surface	45.5 / L-80 / BTC	9.950	Surface	2,561'	0.0962
7-5/8"	Intermediate	29.7 / L-80 / IBT-M	6.875	Surface	5,989'	0.0459

LINER DETAIL

4"	Liner	9.5 / L-80 / IBT-M	3.548	5,076'	9,242'	N/A
4"	Screened Liner	9.5 / L-80 / IBT-M	3.548	5,208'	9,195'	N/A

TUBING DETAIL

4-1/2"	Tubing	12.6 / L-80 / IBT	3.958	Surface	5,118'	0.0152
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WELL INCLINATION DETAIL

KOP @ 425' MD
Hole Angle Passes 50 Deg. @ 2,770'
Max Angle in Tubing = 78 Deg.
73 Deg. @ Sliding Sleeve

JEWELRY DETAIL

No	Depth	Item
1	30.04'	FMC TC-1A-EMS 11" x 4.5" Tubing Hanger
2	2,107'	GLM: 4-1/2" x 1" KBG-2 w/ DCK-2 Shear Valve BEK Latch
3	4,965'	Phoenix Discharge Pressure Gauge
4	4,973'	HES 4-1/2" XD DURA Sliding Sleeve w/ Centralizers - Reverse Circulating Jet Pump
5	5,000'	4-1/2" Phoenix Pressure Sensor
6	5,065'	HES 4-1/2" XN Nipple - MIN ID= 3.725" No-go w/ PKN Plug set 8/8/2019
7	5,076'	7-5/8" x 5.5" Liner Tieback Sleeve
8	5,083'	7-5/8" x 5.5" ZXP LTP
9	5,083'	Baker 80-47 Seal Bore Assembly - BTM @ 5,118'
10	5,120'	Crossover 5-1/2" x 4-1/2" - L-80 IBT
11	5,207'	Crossover 4-1/2" x 4" IBT

PERFORATION DETAIL

Sands	Top (MD)	Btm (MD)	Top (TVD)	Btm (TVD)	FT	Date	Status
Ugnu Undefined	5,460'	5,485'	3,742'	3,742'	25	7/26/2004	Open
	5,690'	5,715'	3,748'	3,689'	25	7/25/2004	Open
	5,920'	5,945'	3,745'	3,743'	25	7/25/2004	Open
	6,150'	6,175'	3,730'	3,728'	25	7/25/2004	Open
	6,380'	6,405'	3,716'	3,714'	25	7/25/2004	Open
	6,610'	6,635'	3,699'	3,697'	25	7/25/2004	Open
	6,890'	6,915'	3,675'	3,673'	25	7/25/2004	Open
	7,300'	7,325'	3,643'	3,640'	25	7/24/2004	Open
	7,825'	7,850'	3,621'	3,622'	25	12/9/2004	Open
	8,000'	8,025'	3,624'	3,625'	25	12/9/2004	Open
	8,380'	8,405'	3,629'	3,629'	25	12/9/2004	Open

Perforation Charge Detail: 2.5" HMX 6SPF Random Orientation. PDS tie in log 7/24/2004

GENERAL WELL INFO

API: 50-029-23176-00-00
Drilled and Complete by Doyon 14 - 10/6/2003
CTU Perf Add - 8/13/2004

Revised By: TDF 9/16/2019

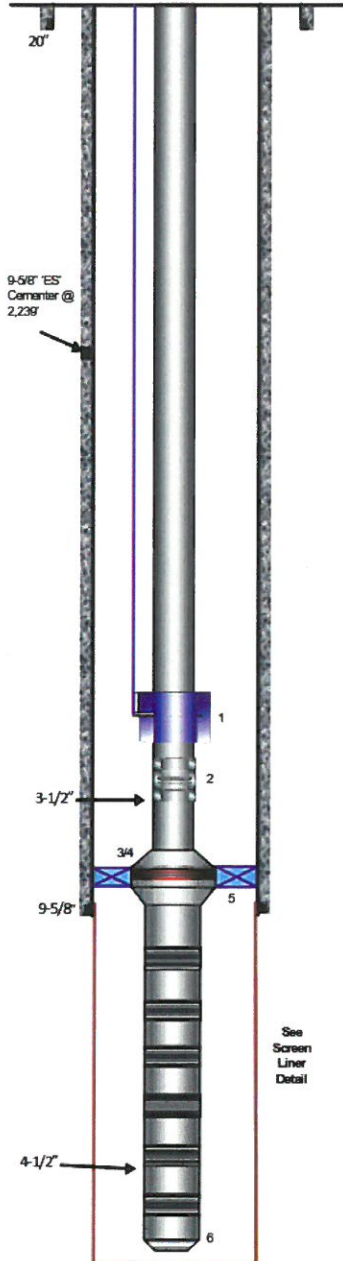
Exhibit I-1: MPU S-22 Well Schematic



SCHEMATIC

Milne Point Unit
Well: MPU S-44
PTD: 50-029-23694-00-00
API: 221-044

Orig. KB Elev.: 63.24' / GL Elev.: 37.0'



TD = 13,437' (MD) / TD = 4,082' (TVD)
PBD = 13,437' (MD) / PBD = 4,082' (TVD)

TREE & WELLHEAD

Tree	Cameron 3 1/8" 5M w/ 4-1/16" 5M Cameron Wing
Wellhead	Cameron 11" 5K x sliplock bottom w/ (2) 2-1/16" 5K outs

OPEN HOLE / CEMENT DETAIL

44"	18.5 Bbls Concrete
12-1/4"	Stg 1 -Lead 366 sx / Tail 391 sx
	Stg 2 -Lead 710 sx / Tail 270 sx
8-1/2"	Cementless Screen Liner

CASING DETAIL

Size	Type	Wt/ Grade/ Conn	Drift ID	Top	Btm	BPF
20"	Conductor	129.5 / X-52 / Weld	N/A	Surface	117'	N/A
9-5/8"	Surface	47 / L-80 / TXP	8.525"	Surface	2,239'	0.0732
9-5/8"	Surface	40 / L-80 / TXP	8.679"	2,239'	5,242'	0.0758
4-1/2"	Liner	13.5 / L-80 / Hyd 625	3.795"	5,047'	13,437'	0.0149

TUBING DETAIL

3-1/2"	Tubing	9.3 / L-80 / EUE 8RD	2.992"	Surf	5,056'	0.0087
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WELL INCLINATION DETAIL

KOP @ 433' MD
Max Hole Angle = 93°

JEWELRY DETAIL

No	Top MD	Item	ID
Upper Completion			
1	4,600'	Zenith G6 Gauge 400 Bar 150C, 2 Press 2 Temp	2.992"
2	4,653'	XN Nipple, 2.85" Bottom No-Go, 2.813" Packing Bore	2.750"
3	5,045'	8.25" No Go Locator Sub (3.61' off No-go)	2.970"
4	5,046'	Bullet Seals - TXP Top Box x Mule Shoe	6.160"
Lower Completion			
5	5,047'	9-5/8" SLZXP Liner Top Packer	7.020"
6	13,435'	Shoe	3.950"

4-1/2" SCREEN Liner

Jts	Top (MD)	Btm (MD)	Top (MD)	Btm (TVD)
1	5,402'	4,111'	5,444'	4,110'
1	6,010'	4,105'	6,051'	4,105'
1	6,423'	4,108'	6,454'	4,108'
1	6,955'	4,100'	6,996'	4,099'
1	7,153'	4,097'	7,195'	4,097'
1	7,477'	4,092'	7,518'	4,091'
1	7,943'	4,088'	7,984'	4,088'
1	9,696'	4,065'	9,737'	4,064'
1	10,227'	4,068'	10,268'	4,065'
1	11,035'	4,068'	11,076'	4,067'
1	11,661'	4,082'	11,702'	4,083'
1	12,243'	4,085'	12,285'	4,085'
1	12,816'	4,090'	12,857'	4,090'
1	13,233'	4,088'	13,274'	4,087'

GENERAL WELL INFO

API#: 50-029-23694-00-00
Completed by Innovation: 7/8/2021

Revised By: JNL 7/21/21

Exhibit I-2: MPU S-44 Well Schematic